Comparing mathematics curricula across countries: What do they tell us?

Jodie Hunter
Massey University
<J.Hunter1@massey.ac.nz>

Ban Heng Choy
National Institute of Education
Nanyang Technological University
<banheng.choy@nie.edu.sg>

A well thought-through mathematics curriculum is central to any efforts aimed at improving mathematics teaching and learning. Seeing curriculum as a collection of learning experiences—"the interaction between the learner and the external conditions in the environment to which he can react" (Tyler, 1949, p. 63)—it is crucial that curriculum documents are clear about the mathematics content to be taught and more importantly, how students are taught these ideas. International benchmark assessments, such as TIMSS, have provided opportunities for mathematics educators to "pursue questions about what makes a difference in those countries for students' learning of mathematics and science" (National Research Council, 1996, p. 2). Therefore, it is not surprising that countries have begun to examine the mathematics curricula of other nations to fine-tune their own curricular. However, we should be cautious about using observations from these comparisons to determine which curriculum is better, or even attempting to synthesise features from different curricula to fuse into our own. Instead, these observations can, at best, "point to questions for further investigation about educational practices and what they may imply for students' learning" (National Research Council, 1996, p. 3). But what can we learn from comparing mathematics curricula across countries? Given that each country has its own unique historical, cultural, political, and social contexts, it is very challenging to pose relevant questions and find answers that will help to refine the current mathematics curriculum. In this roundtable discussion, we will use examples from two contrasting economies—New Zealand and Singapore—to discuss the kind of questions and insights we can derive from such comparisons. This will have important implications for what and how we can learn from comparing mathematics curricula across countries.

References

National Research Council. (1996). *Mathematics and Science Education Around the World: What can we learn? -- Summary.* The National Academies Press. https://doi.org/10.17226/9146

Tyler, R. W. (1949). *Basic Principles of Curriculum and Instruction.* The University of Chicago Press.

2021. In Y. H. Leong, B. Kaur, B. H. Choy, J. B. W. Yeo, & S. L. Chin (Eds.), *Excellence in Mathematics Education: Foundations and Pathways (Proceedings of the 43rd annual conference of the Mathematics Education Research Group of Australasia)*, p. 447. Singapore: MERGA.